Space Sailors Reach New Heights

APRIL 2007

All Hands

MAGAZINE OF THE U.S. NAVY

Navy's Environmental Stewardship

[On the Front Cover]
Sailors aboard USS *Doyle* (FFG 39) keep a close watch on right whales off the Southeastern coast of Florida, during calving season.

Photos by MC2(SW) Rebekah Blowers
Photo Illustration by Juana Merlo

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All Hands brings you closer to the North Pole during SCICEX '07.

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All HANDS

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Everywhere you look, you see how important it is to keep the environment clean and safe and to conserve the nation's natural resources. The Navy has been taking an active part in this effort for more than 20 years particularly at Naval Air Station (NAS)

Jacksonville (Jax) and Naval Station (NS) Mayport, Fla.

Photo by MC2(SW) Rebekah Blowers

18 Protecting A Species

With only 350 to 400 of them left, the right whale has been migrating, way before we came here, to the one part of the United States where the Navy's efforts are now an integral part of their survival.

24 Space Sailors

Like Sailors who usually start pre-deployment training six months before a regularly scheduled deployment, NASA astronauts start training two years before their projected launch date. That training begins in the world's second largest pool, the Neutral Buoyancy Lab (NBL) at the Johnson Space Center in Houston.

Photo by MC1(AW) Brien Aho

32 NECC: Consolidation of Forces

With the current operational tempo and the Navy's evolving role in the global war on terrorism it has become evident that the Navy must take the fight inland to better assist our sister services with their heavy deployment schedules.

Photo by MC1(AW) Brien Aho

AC1 Otto Delacruz identifies an air contact to AC1 Brent Watson while standing watch in the ship's helicopter direction center aboard USS *Boxer* (LHD 4).

Photo by MCSN Joshua Valcarcel

Speaking with Sailors

Master Chief Petty Officer of the Navy
MCPON (SW/FMF) Joe R. Campa

CNO released a message last month that I hope you've all seen and understand. The topic was Employability/Deployability and it affects every one of us. The message uses terms like Homeport Tempo, Dwell Ratio and Deployment.

Those are three terms the entire Navy must learn and understand.

- Homeport Tempo is the percentage of time a unit is in homeport within an operational cycle, which is typically 27 to 32 months.
- Dwell Ratio is the ratio of the number of days a unit spends between deployments and the length of the last deployment in their operational cycle. Dwell replaces a term you may have known as Turn-Around Ratio.
- Deployment. Simply, it's the time spent forward deployed in support of a Combatant Commander. There is no minimum. Any forward deployed time now counts toward this total.

Why is it important for you to understand these terms? Because they have been created to put structure and a level of predictability to how our forces are employed and deployed.

It provides the combatant commanders the Navy presence required to win the Global War on Terror.

It's critical that this policy is understood. Sailors have to understand its impact. Families have to be able to rely on the results of it so that they can rely on consistent schedules again.

- There's a possibility crews will spend more than six months at sea when they deploy, but only with CNO approval.
- It also means the Navy will maintain a 1:1 Dwell Ratio, keeping ships inport at least as long as the length of their last deployment.
- CNO has reaffirmed our long-standing goal of spending no more than 50 percent of the time away from a Sailor's homeport. CNO must approve any unit's Homeport Tempo that drops below 50 percent.

Let's be clear. Employability/Deployability was designed to put more forces to sea in more places when and where necessary. This is the service we joined, and the Navy's mission has never been more important. We must continue to be flexible and expeditionary if we are to meet emerging global threats.

Employability/Deployability is a highly important designed with an understanding that Sailors are warriors who understand their mission. Does it mean you could spend more time deployed? Yes, but only after the CNO approves. I know you see the need. I know the Combatant Commanders who value what you bring to the fight see the need.

This instruction means predictability, and it means more Sailors could be ashore for shorter periods of time before they deploy again. A large amount? No. But, judging by those I've spoken to, I know you understand that need.

Speaking with Sailors **is a regular column initiated by the Master Chief Petty Officer of the Navy as a way of reaching out to the men and women of the fleet, whether they are stationed just down the road or halfway around the world.**

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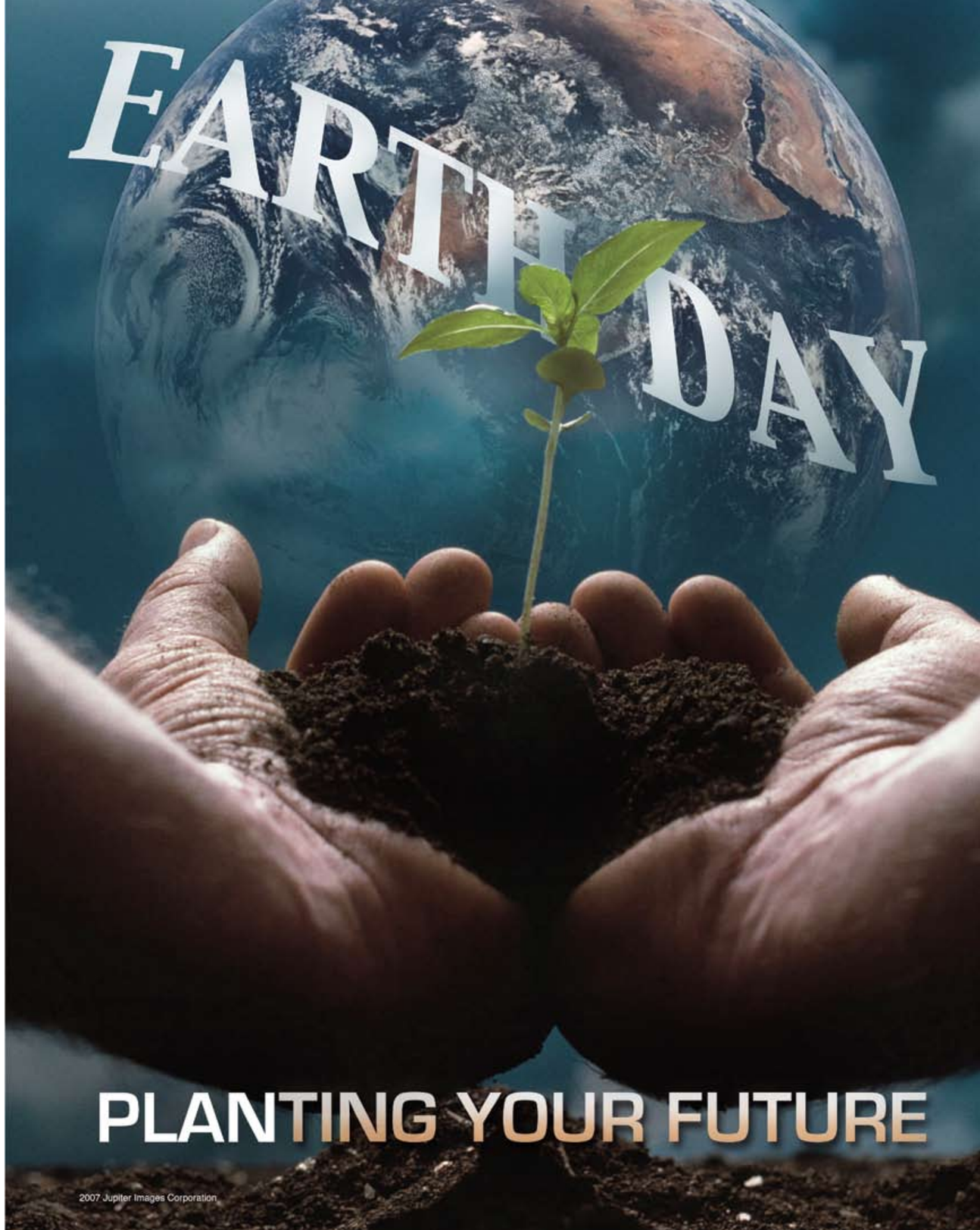

Around the Fleet

Roughead Addresses Deployability and Employability Policies

Commander U.S. Pacific Fleet ADM Gary Roughead recently visited USS *Abraham Lincoln* (CVN 72), and spoke to the crew about the Navy's deployability and employability policies during an all hands call aboard the aircraft carrier.

"It's important to understand the deployability and employability policy," he said. "We're committed to having ships in their homeport at least 50 percent of the time in an employment cycle. Homeport tempo is something that we're paying very close attention to.

"Homeport tempo is the percentage of time a unit is in homeport from the end of one maintenance phase to the end of the next maintenance phase," he added.

Roughead, who commands U.S. naval forces in an area encompassing more than 100 million square miles, addressed the ship's crew and commended the Sailors' hard work through a recent deployment and the ship's current overhaul period.

In October 2004, *Lincoln* was diverted to Southeast Asia during Operation *Unified Assistance,* following a devastating tsunami, to deliver supplies and aid, potentially saving thousands of lives.

"*Abraham Lincoln* projects a positive image of the United States and the U.S. Navy," he said. "This crew and this ship are making a difference in the Pacific Fleet and throughout the world. The work this ship did a few years ago during the tsunami is not forgotten. What you did is such a powerful thing and the image of this ship is in the minds of people all over the world."

Previously, *Lincoln* was known for a marathon 10-month deployment in support of Operations *Enduring Freedom*, *Southern Watch* and *Iraqi Freedom*. During her most recent deployment, completed in August, she participated in *Valiant Shield* and numerous exercises with foreign navies including *Rim of the Pacific 2006*.

Roughead took questions from the crew on topics ranging from the 1,000-ship Navy, to individual augmentee deployments and the implementation of the Navy's new uniforms.

"I know the maintenance period can be a hard time for the crew," Roughead said, "and I thank you for your great service. I thank you for what you've done, and what I know you'll continue to do."

Lincoln is currently moored at Naval Base Kitsap, Bremerton, Wash., while completing a dry dock planned incremental availability.

Story by MC2(SW) Michael Cook, USS Abraham Lincoln (CVN 72).

NSIPS Now Available Fleetwide

The Navy Standard Integrated Personnel System (NSIPS), a Web-enabled pay and personnel management tool, is officially available fleetwide.

The final shipboard installation, aboard USS *Kitty Hawk* (CV 63), marked the achievement of full operational capability, the last major acquisition milestone for the program.

NSIPS provides field-level standardized and integrated pay and personnel records management capability for all Navy active and Reserve members.

"The ability to easily and reliably access their pay and personnel records from around the fleet is an immense enhancement because it gives our Navy members a tool to help manage their career," said CDR Susan Eaton, NSIPS program manager. "Having NSIPS and the Electronic Service Record (ESR) available fleetwide enables timely and accurate pay changes and provides Sailors at sea or shore commands with ready access to their service record data. Sailors can focus on their mission rather than worrying about whether or not their records are up to date."

In October 2006, the chief of naval personnel authorized the use of the ESR for service record management. ESR replaces the current paper-based Field Service Record with an electronic records management application. It automates most service record maintenance and provides individual service members with secure Web access to service record data. ESR was initially deployed to the Navy Reserve in February 2004, providing Reservists with the capability to update civilian employment information.

The system ensures unprecedented safety and security of Navy pay and personnel records by requiring individual validation for entering, changing, viewing and downloading information. NSIPS utilizes state-of-the-art technology with a defense-in-depth and multi-tiered architecture to provide maximum data safety and security from external threats. NSIPS is the only Navy program that is completely hosted on the Navy Marine Corps Intranet (NMCI) for the shore component of the application.

The system is operational at 351 shore sites and aboard 151 ships.

Story courtesy of public affairs, Program Executive Officer for Enterprise Information Systems, Arlington, Va.

Ricky's Tour

By MC1 Mike Jones

DOD Child Care Named No. 1 in the United States

The National Association of Child Care Resources and Referral Agencies report card released March 1 stated DOD child care facilities scored better than all other state programs in the United States in every area rated.

The report card ranks every state and DOD child care program on 15 basic criteria related to the association's current child care center standards and oversight for a total of 150 points. DOD was ranked the highest at 117 points against an average score of 70 points.

"The Child Development Center staff is always interacting with my son and getting him to interact with other children," said Hospitalman Johnlynn Rudy, Naval Base Kitsap, Bangor Medical Clinic. "I put trust in them because they are qualified in CPR and first aid."

The 15 areas DOD and the states were scored on included training requirements, quarterly inspections, licensing and staff-to-child ratio.

"At Navy child care centers, personnel are required to complete 13 Navy standardized child care modules that consist of safety, nutrition, social development, professionalism, physical development and more," said Victoria Ritterman, child development education technician of Jackson Park Child Development Center. "For an employee to keep their job they need to complete the training modules within 18 months of getting hired."

Eight states and DOD addressed all 10 basic health and safety benchmarks including fire drills, administration of medication, prevention of Sudden Infant Death Syndrome, diapering, hand-washing and safe playground surfaces.

"On a scale of one to 10, I rate the DOD child care an 11 or 12," said Opal Brekke, DOD civilian and mother. "I've lived in Mayport, Fla., Norfolk, and now Silverdale, Wash., with my son attending several different Navy day cares. Every single one of them provided outstanding service with both the in-home care providers and the actual command day cares.

"The youth programs are outstanding," added Brekke. "The facilities are always clean and well taken care of. I don't think enough people take advantage of the care they give. The people are friendly and professional."

Out of all 15 areas DOD and states were scored on, DOD was ranked first in every category.

Story by MC2(AW/NAC) Eric J. Rowley, Fleet Public Affairs Center, Det. Northwest, Silverdale, Wash.

Shipmates

Aviation Structural Mechanic 1st Class (AW) Cody Cearley, a maintainer with Fleet Air Reconnaissance Squadron (VQ) 4, was recently named the Commander, Naval Air Forces (CNAF) Maintainer of the Year. The award honors the job that Cearley, a nine-year Navy veteran, does daily for VQ-4. In his capacity as airframes leading petty officer, he directly supervised and managed the maintenance efforts of more than 200 maintainers and contractors. Cearley said the award was more about the work of those around him than his own performance. "There is no way I could have won an award like this without the work of the junior Sailors and everyone else who works with me," he said. "They did a lot of the hard work along the way." The Maintainer of the Year title adds to what has been an award-filled year for Cearley, who is currently the VQ-4 and SCW-1 Senior Sailor of the Year.

Story and photo by MC1(SW) Charles Ludwig

FY06 CNO Environmental Award Winners Named

The Chief of Naval Operations (CNO) Environmental Readiness Division recently announced the 24 winners in the FY06 CNO Environmental Awards competition.

The annual CNO Environmental Awards program recognizes Navy people, ships and installations for their exceptional environmental stewardship. The FY06 competition categories included natural resources conservation, cultural resources management, environmental quality, pollution prevention, environmental restoration and environmental planning.

The winners are listed below in alphabetical order:

Natural Resources Conservation

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Around the Fleet

▶ FC2 Thomas Bailey from USS The Sullivans (DDG 68) performs a tactical peek before boarding the Romanian Ship *Regele Ferdinand* as part of a visit, board, search and seizure exercise.

Photo by MC1 Brian Goyak

▼ Sailors aboard USS *Abraham Lincoln* (CVN 72) use teamwork to lower catapult No. 2 back into the flight deck. *Lincoln* is wrapping up the last phase of its Dry Dock Planned Incremental Availability (DPIA) in which months of hard work from Sailors and civilians have successfully prepared the ship for its return to full operational capability.

Photo by MC3 Jordon R. Beesley

To be considered for the "Around the Fleet" section, forward your **high resolution (5" x 7" at 300 dpi) images** with full credit and cutline information, including **full name**, **rank** and **duty station** to:
navyvisualnews@navy.mil

Directions on how to properly submit photos can be found at www.navy.mil/photo_submit.html

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Click on the **Navy's** home page, **www.navy.mil**, for fresh images of your shipmates in action.

▼ ACAN Shakeiva Jones (left) and CSSN Leonell Cruz prepare deserts in the bake shop aboard USS *Harry S. Truman* (CVN 75).

Photo by MC2 Ronald Gutridge

▲ Sailors play basketball during a steel-beach picnic on the flight deck of USS *Antietam* (CG 54).

Photo by MC3 Ron Reeves

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Large Installation:
- Naval Air Station Fallon
- Naval Support Activity Crane
- Naval Weapons Station Charleston, S.C.

Cultural Resources Management Installation:
- Commander Fleet Activities Sasebo, Japan

Cultural Resources Management Individual or Team:
- Cultural Resources Management Team, Commander Navy Region Hawaii
- Cultural Resources Team, Commander Navy Region Northwest
- Leonard E. Winter, Naval Facilities Engineering Command Southeast

Environmental Quality Industrial Installation:
- Fleet and Industrial Supply Center Puget Sound, Manchester Fuel Department
- Fleet Readiness Center East, Cherry Point, N.C.

Environmental Quality Overseas Installation:
- Commander Fleet Activities Sasebo, Japan
- U.S. Naval Station Rota, Spain
- U.S. Naval Support Activity Bahrain

Environmental Quality Small Ship:
- USNS John Ericsson (T-AO 194)
- USS Lake Champlain (CG 57)
- USS O'Kane (DDG 77)

Pollution Prevention Non-industrial Installation:
- Naval Station Everett, Wash.
- Naval Surface Warfare Center, Port Hueneme Division

Pollution Prevention Individual or Team:
- Awni M. Almasri, Commander Navy Region Southwest Asia
- Pollution Prevention Afloat Team, Naval Sea Systems Command
- Pollution Prevention Team, Commander Navy Region Mid-Atlantic

Environmental Restoration Installation:
- Alameda Point
- Naval Weapons Industrial Reserve Plant McGregor

Environmental Planning Team:
- China Lake Environmental Planning Team, Naval Air Weapons Station China Lake, Calif.
- Environmental Planning Team for the Pier 6 Replacement and Dredging Project, Naval Submarine Base New London, Conn.

The winners advanced to the Secretary of the Navy (SECNAV) Environmental Awards competition in all categories except for the Environmental Planning Team Award category which has no equivalent at the SECNAV competition level.

Story by Easter R. Thompson, CNO Environmental Readiness Division, Washington, D.C.

Secretary of the Navy Recommends Way Ahead for LCS Program

Based on a comprehensive review of the Littoral Combat Ship (LCS) acquisition program, Secretary of the Navy Donald C. Winter recently announced that he is prepared to lift a previously issued stop-work order for construction of LCS 3.

The ship is currently under contract to Lockheed Martin Corp. Maritime Systems & Sensors unit, Moorestown, N.J. Lifting the stop-work order is contingent upon the Navy and Lockheed Martin reaching agreement on a renegotiated contract.

As a result of a nearly two-month assessment, the Navy has revalidated the war-fighting requirement and developed a restructured program plan for the LCS that will improve

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Around the Fleet

▲ Members of Deck Department's paint team work
to reposition a painting barge underneath an elevator aboard USS *Abraham Lincoln* (CVN 72).

Photo by MC3 James R. Evans

▲ ND3 Kurt Eberle waits for a tool bag before he begins
a dive project in support of USS *Miami* (SSN 755). Eberle is assigned to Naval Submarine Support Facility Dive Locker Subase, New London, Conn.

Photo by John Narewski

▲ A plane captain signals an E-2C *Hawkeye* assigned to
Carrier Airborne Early Warning Squadron (VAW) 112 prior to launch on the flight deck of USS *John C. Stennis* (CVN 74).

Photo by MC3 Jon Hyde

◀ An MH-60S *Seahawk*, assigned to Helicopter
Combat Support Squadron (HSC) 26, takes off with Sailors assigned to Explosive Ordnance Disposal Mobile Unit (EODMU) 2 to conduct static-line jump operations.

Photo by MC3 Kenneth R. Hendrix

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management oversight, implement more strict cost control, incorporate selective contract restructuring and ensure that an important war fighting capability is provided to the fleet consistent with a realistic schedule.

This plan will ensure best value to the Navy for the completion of LCS 1 through 4, procurement of existing designs in FY08 and FY09 to fill the critical warfighting gap and establish a sound framework for transition to a single selected design in FY10. The Navy will work closely with Congress on reprogramming actions necessary to bring this program forward.

"It is vital that the Navy continue through first of class construction challenges to complete LCS 1 and LCS 2. When these ships are delivered, we will be able to fully evaluate their costs and capabilities," said Winter. "LCS 3 construction may be resumed under revised contract terms that rebalance the risk of cost growth between the government and industry. LCS 4 construction will continue as long as its costs remain defined and manageable."

Under the restructured program plan, the Navy will recommend deferral of procurement of LCS in FY07 and use those funds to complete the construction of LCS 1 through 4. The Navy intends to continue with a plan to procure a reduced number of ships in FY08 and FY09 within existing budget resources and with the approval of Congress because of the compelling need to address critical war-fighting gaps in the littorals and strategic choke points.

The Navy will transition to a single sea frame configuration, incorporating a Navy-specified open architecture combat system, in FY10 after an operational assessment of all critical factors between LCS 1 and LCS 2. The Navy will hold a full and open competition of the selected design (Flight 1) for the FY10 sea frame procurement to reduce life cycle costs of the program.

"LCS is needed now to fill critical, urgent war fighting requirements gaps that exist today. It is imperative that the Navy deliver this warship class and its important capabilities to the fleet as soon as possible," said Chief of Naval Operations ADM Mike Mullen. "It is just as imperative that we do so in the most cost effective manner possible."

The LCS is an entirely new type of U.S. Navy warship. A fast, agile, and networked surface combatant, LCS's modular, focused-mission design will provide combatant commanders the required war fighting capabilities and operational flexibility to ensure maritime dominance and access for the joint force. LCS will operate with focused-mission packages that deploy manned and unmanned vehicles to execute missions as assigned by combatant commanders.

Operational experience and analyses indicate that potential adversaries will employ asymmetric capabilities to deny U.S. and allied forces access in critical coastal regions to include strategic choke points and vital economic sea lanes. Asymmetric threats will include small, fast surface craft, ultra-quiet diesel submarines and various types of mines.

LCS will also perform special operations forces support; high-speed transit; maritime interdiction operations; intelligence, surveillance and reconnaissance; and anti-terrorism/force protection. While complementing capabilities of the Navy's larger multi-mission surface combatants, LCS will also be networked to share tactical information with other Navy aircraft, ships, submarines and joint units.

Special release courtesy of DOD

MAINTAINING THE NAVY'S

environmental resources

Story and photos by MC2(SW) Rebekah Blowers

▲ DC2 (SW) Jesse Spears tests fuel samples aboard USS *Doyle* (FFG 39) as part of his oil king watchstanding duties. Making sure the ship's fuel and oil are free of contaminates helps the ship run more efficiently and save fuel.

◀ Sailors assigned to Harbor Operations at Naval Station Mayport, Fla., use an oil boom to practice gathering oil in case of a spill.

Environmental issues are at the forefront of the minds of countless Americans, agencies, and politicians. Everywhere you look, you see something about how important it is to keep the environment clean and safe and to conserve the nation's natural resources.

According to RADM James A. Symonds, Director, Chief of Naval Operations Environmental Readiness Division, the Navy has been taking an active part in this effort for more than 20 years. Sailors at sea and on shore in the Southeast, particularly at Naval Air Station (NAS) Jacksonville (Jax) and Naval Station (NAVSTA) Mayport, Fla., and one of the ships homeported at Mayport USS *Doyle* (FFG 39), participate in programs such as the use of alternative fuels, fuel efficiency, oil spill mitigation and the Clean Marina program. Aboard *Doyle*, as well as other ships throughout the fleet, they test oil and fuel samples and decrease speed to be as fuel efficient as possible.

"We're a single screw ship; so we have one shaft with two LN 2500, gas turbine engines. When you have a gas-powered engine trying to form enough thrust to move this 4,100-ton frigate, you're going to burn some fuel. For the most part, we try to conserve as much fuel as possible," said CDR Michael Elliot, commanding officer, USS *Doyle*.

"The minute we pass the sea buoy, which is a few miles off the coast, we'll go from two engines to one. This is a big deal because we usually burn about 7 percent to 9 percent of our fuel when we have two engines online. At sea, it can go as high as 11percesnt to 12 percent. But with one engine on that shaft, I'm actually burning about 3 percent to 4 percent a day. We carry about 200,000 gallons of fuel on board.

"If we're going to be burning 4 percent of fuel a day underway off the coast of Mayport vice 11 percent, we're saving 33 percent of fuel a day. Now if you go in terms of money, 33 percent of fuel is roughly anywhere from $14,000 to $24,000 a day so it makes sense to be fuel conscious," Elliot said.

One of the Doyle's "oil kings," Damage Controlman 2nd Class (SW) Jesse Spears, said he is responsible for lube oil and fuel oil on board.

"Lube oil and fuel oil quality management can play a big role in the ship's efficiency. If you don't have good, clean fuel and oil, the ship doesn't work the way it needs to and when we're underway six months of the year, we require and depend on this to get us there and back," Spears said.

He explained that he and his team take fuel and oil samples at least once a day to ensure there is no water or sediment in the fuel that could decrease efficiency.

"We sound the tanks to make sure the fuel is clean everyday, and if it's not clean we strip [the tanks] and remove the dirt and sediment from the tank itself. We check this once a day, sometimes two or three times a day, depending on the sea state. If we're at rough seas we take it two or three times a day because we could have a leak somewhere and we can't have our gas turbine engines and diesels running off of water."

Spears explained how detrimental pollutants can be to the fuel and how well the ship runs.

"Water and sediment in fuel or in oil will cause metal-on-metal friction and reduces viscosity. It's the same concept of putting water in the oil in the engine of your vehicle. You need viscosity to keep the parts lubricated and running smoothly and freely throughout the engine. When you take that viscosity away, heat builds up and starts to break down the metal, damaging the engine.

"As far as fuel goes, we have filters set up to catch the water and sediment and keep it from getting in the fuel. If it weren't for filters, the fuel filter and fuel nozzles could clog causing turbines and diesels not to run right, and we are going to be less efficient in what we do out here," Spears said.

On shore installations, the Navy is making great strides in fuel efficiency efforts as well as using alternative fuels. Symonds said that the CNO distributed guidance in 2005 mandated the use of alternative fuels. Naval Facilities Engineering Command (NAVFAC), Southeast Region is just one example of how the Navy is doing this.

Symonds said that bio-diesel and

◀ A Sailor from Harbor Operations at NAVSTA Mayport, Fla., ties up one of the harbor boats after an oil spill mitigation drill.

"If it were a spill of several thousand gallons, we would deploy our trailer and 10 people, ring out the oil spill into containment drums and ship them off to be processed out."

- BM1(SW) Matthew Masingill

compressed natural gas (CNG) are vital to the Navy's environmental efforts.

"In 2005, the CNO directed the Navy to explore and use more alternative fuels. This is important to the Navy for two reasons: To reduce our affect on the environment and to decrease our dependence on oil. We are doing that through bio-diesel fuel because the Navy said that non-tactical diesel vehicles will be fueled with a blend that is 20 percent bio-diesel as much as practical. CNG is another form of alternative fuel and we also have a good number of non-tactical vehicles that are fueled by CNG," Symonds said.

According to Douglas Hatcher, NAVFAC Southeast transportation site manager, some alternative fuel vehicles use CNG, electric small motorized vehicles (SMVs) and bio-diesel fuel.

"CNG cuts back on oil use on the whole," Hatcher added. "With the SMVs there's no gas at all and the cost of electricity is not that much in some places. It saves money and oil. It's a lot more cost efficient for different activities," Hatcher said.

Frank Rogers, a NAVFAC Southeast transportation specialist in Jacksonville, said the installation has about 35 to 40 CNG vehicles and feels they are more effective and less harmful to the environment.

"The gas mileage on the CNG is about the same as a regular vehicle, but the CNG has no emissions at all. It's 100 percent clean air. As far as the price, it's a bit cheaper than regular unleaded gas. It burns about the same amount of fuel, it won't gunk up your engine and cylinders so it saves a lot on maintenance and repair costs. It definitely helps the environment," Rogers said.

There are several other ongoing environmental projects in the southeast and throughout the Navy. One is the preservation of the St. John's River near NAS Jacksonville and the basin at NAVSTA Mayport through oil spill mitigation. The team at Harbor Operations (Harbor Ops) Mayport works with state and federal agencies to make sure that if there is an oil spill, they are there to clean it up and mitigate any harm to the environment.

"We have about 25 sites up and down the St. John's River with little tributaries going to it and different areas that might have different wildlife that would be sensitive to the petroleum [or a spill]. What we do is we establish where it is and what the tide is and then figure out from the tide charts and the current tables where the spill will be. Anything between those two points, we will boom off those areas. We do whatever we need to do and we do it as efficiently as possible," said Rod Jones, spill response manager for Harbor Operations Mayport.

Boatswain's Mate 1st Class (SW) Matthew Masingill, facility response trainer at Harbor Operations, explained some of the tools and techniques he and his team use.

"First off, Mayport Harbor Operations is fully responsible for all oil spills here," said Masingill. "Ships notify us of an oil sheen or a possible spill and it comes through control in the Harbor Ops building. We send out a boat with duty harbor ops to inspect. If there's an oil spill, we deploy all means necessary to contain the spill. Our top priority is containment.

"We'd definitely use an oil boom for containment," added Masingill. He explained that a boom is a long buoy-like line that small boats release in the water and swing around to make a U or other shape that will collect contaminants in the water in one isolated area. There are other ways they can isolate a spill.

"We use natural barriers - quay walls and so on that the ships are moored up to. We like to pocket the oil, and once it's pocketed we can get our skimmer boat in there, or a truck, and work it to our benefit," said Massingil. "It gets more detailed with the size of the spill. If it were a spill of several thousand gallons, we would deploy our trailer and 10 people, ring out the oil spill into containment drums and ship them off to be processed out. Normally it's just a utility boat, a skimmer, or a work platform to provide the boom to contain the spill."

The Harbor Ops team goes through extensive training to complete their mission, including weekly drills to ensure everyone gets and stays qualified for any casualty or spill in their operating area. BM2(SW) Jason Calkins, dock master and Fleet Response Team (FRT) training coordinator for oil spill response, explained some of the training process.

"Every new check-in goes through an industrial hygiene screening process so they can qualify as oil spill responders. We have a 40-hour oil spill Occupational Safety and Health Administration course and Hazardous Waste Operations and Emergency Response (HAZWOPER) classroom training. Once a week we train different scenarios on the waterfront. Then twice a year, we have an outside agency come in and critique our efforts and our training," Calkins said.

Jones agreed, sharing more details of the training process.

"Sailors have to participate in the FRT training, annual refresher and either an initial three- or five-day course. We do that twice a year because of the rotation of people. They also have to be HAZWOPER qualified and there are incident command system training requirements they must meet.

"It's a lot of training," continued Jones, "Sailors need it all before they can respond to their first spill. They can go watch but they can't participate. That's a safety thing, part of the federal code of regulations. We drill usually once a week, but if there's a real spill, that will count for training. We have 100 people and we are supposed to keep 80 percent totally qualified, but usually we're close to 100 percent," Jones said.

CWO3 Dareyl Carter, officer in charge of Harbor Operations, said he is proud of his team and their teamwork especially with other state and federal agencies.

"It's a collaboration between the Navy, Coast Guard, Fish and Wildlife Commission and the Jacksonville companies that coexist with us in our efforts to contain these oil spills," Carter said. "I give a lot of credit to these guys here. They do extensive training and you can tell the training has paid off.

"We're making a huge difference. I know the effects hazardous waste, hazardous materials and oil spills have on the environment. If we didn't have anything in place to contain that, it would be very detrimental to our environment."

Calkins said he feels he makes a difference in the mission he, his shipmates and his civilian counterparts undertake every day.

"I think it's rewarding, and I am giving back because if we didn't respond and have these controls in place and didn't have this training, sensitive areas in the Jacksonville area could potentially be affected. Protecting these areas is good for the environment and it's great for the community.

▲ Sailors assigned to NAVSTA Mayport's Harbor Operations put a skimmer in the water during an oil spill mitigation drill.

▲ Mulberry Cove Marina at NAS Jacksonville, Fla., has been a Clean Marina for the past three years. Part of keeping that status consists of educating the public on ways to keep contaminants out of the water. Here, employees at Mulberry Cove Marina lower a small boat into the water.

▲ Sailors assigned to NAS Jacksonville, Fla., perform errands around base in a small electric motorized vehicle.

"Jacksonville has a lot of fishing and recreational water sports," said Calkins. "Those areas could be damaged and be unusable if spills were not controlled.

"We have one of the largest fresh water rivers port operations on the Eastern seaboard. We work in coordination with civilian agencies and could be the first responders to anything along the eastern seaboard of our operating area. So it's not just the Navy's assets we help with. It could be anything."

Another environmental effort going on in the Southeast, as well as throughout the country, is the Clean Marina Program.

"The Clean Marina program was developed by the National Oceanographic and Atmospheric Administration (NOAA) and it is a voluntary program for marinas throughout the country," said Symonds. "Twenty-two of our 36 marinas are in states that participate in the Clean Marina Program. So far nine of those 22 marinas are fully certified as Clean Marinas.

"By the end of 2007, our goal is for all of the marinas be in compliance with the program," he added. "This voluntary program has an obvious benefit ensuring the marina waters don't pollute the waters going out to sea. So far they have met with great success and we hope it's going to be even better in the future."

According to Phil Collins, marina manager at NAS Jacksonville's, the base's Mulberry Cove Marina has held Clean Marina status for about three years.

"Clean Marina has two parts: It gives marinas the tools to educate the public on keeping the environment clean, having minimum impact on the environment, and also gives the marinas tools to have the same thing happen in their back yard or in house. We do everything from educating the public on invasive species to proper litter disposal, grey water, sewage and those kind of things.

"Also the program recognizes boaters and provides incentives. We hand out oil absorbency rags as they become available. We put fuel recapture bottles down by the fueling dock so when contaminants come out of outboard engines, we can capture it and keep it from going out into the environment. We also perform preventive maintenance on our outboard engines in an enclosed barrel and put oil absorbency rags on the top that will soak up all the oil from the maintenance on the two-stroke engines so it's not released into the environment," Collins said.

Collins noted it was a fairly simple process for him and his team to meet the required standards, and keep those standards in maintaining Clean Marina status.

"Being on a Navy base, it wasn't hard to meet the standards to qualify for Clean Marina status. It's mainly because we are inspected annually by base safety and we have the environmental division coming down to inspect us on a weekly basis. The Navy is extremely pro-active on environmental situations, like hazardous wastes and materials.

"So when the state and federal representatives came out to certify us it was really just a matter of tweaking a few things. The St. John's River is a huge asset to the city, and, as a resident, I want to keep it healthy," Collins said.

"The Clean Marina program is another example of the Navy being a good neighbor and a good steward. Anything that helps protect the environment and helps keep the public educated is good in my book," he said.

Symonds said that he wants every Sailor, civilian and family member to continue to conserve oil and fuel, and keep the ocean's water free from oil and contaminants. By everyone doing their part in this, they can protect the environment, and ensure the Navy can continue its worldwide mission.

"Environmental stewardship is important to us because it is the right thing to do and it's the law. The Navy and all of its components need to uphold those laws because if we don't, we run the risk of having our training activities curtailed or restricted. It's incumbent on everybody to understand the rules and regulations and their part in compliance. For a number of years, the Navy has been involved in different areas where we led in compliance across the services," said Symonds.

"All of our efforts come down to each Sailor doing the right thing every day. I know that our people get it and understand the importance of preserving our natural resources. They need to know that every single one of their actions – every day – makes a difference."

Blowers is a photojournalist assigned to Naval Media Center, Washington, D.C.

NBVC Uses Grease Trap to Forge into Future

Story and photo by MC2(SW/AW) Jason McCammack

The next time you order up your favorite lunch-time guilty pleasure, maybe onion rings or chicken fingers, you might feel a little less guilty knowing your greasy finger foods are part of a groundbreaking, eco-friendly Navy program.

Naval Base Ventura County (NBVC), Calif., has staked its claim as a leader in the Navy's efforts to be a pro-active in environmental issues by initiating the Navy's first "mini refinery" that converts used restaurant oil to bio-diesel.

Bio-diesel provides alternate fuel vehicle credits and reduces diesel fuel consumption.

The "mini refinery" is so compact that it could fit into the bed of a pickup truck and looks a little like one of the microbreweries popping up in trendy pubs. The Navy, however, has big plans for this little refinery.

By collecting used cooking oil generated by restaurants at NBVC and other locations, the Navy expects to demonstrate how the military converts used cooking oil into cleaner burning bio-diesel fuel. Normally, this cooking oil is cast off and disposed of as solid waste.

Engineers plan on producing the alternative fuel in 200-gallon batches. Base vehicles will test 60,000 gallons and 20,000 gallons each will be distributed to the National Park Service and Ventura County's local government.

The bio-diesel demonstration validation effort is executed under a Cooperative Research and Development Agreement between the Naval Facilities Engineering Service Center and Biodiesel Industries, Inc.

The Naval Base Ventura Pollution Prevention Team includes installations at Naval Air Station Point Mugu, Calif.; Naval Construction Battalion Center Port Hueneme, Calif.; and Navy Outlying Landing Field, San Nicholas Island.

McCammack is a photojournalist assigned to Naval Media Center, Washington, D.C.

▶ A female right whale will produce a calf once every three to four years. The calves are usually born during the winter with a birth weight of approximately 3,000 pounds. They are usually 10 to 15 feet long and stay with their mothers for up to a year.

Photo courtesy of the Florida Fish and Wildlife Conservation Commission

Protecting a Species

Navy Sailors in Southeast Keep Right Whales Safe

Story and photos by MC2(SW) Rebekah Blowers

Only 350 to 400 of them are left, and the right whale has been migrating, way before we came here, to the one part of the United States where the Navy's efforts are an integral part of their survival. According to Katie Jackson, a marine mammal biologist for the Florida Fish and Wildlife Conservation Commission, the critically endangered North Atlantic right whale migrates from waters off Eastern Canada to the safety of the Atlantic waters off the southeast coast, close to Naval Air Station (NAS) Jacksonville (Jax) and Naval Station (NS) Mayport, Fla., to birth their young. The annual calving season runs from Dec. 1 to March 31.

▲ Lookout watches aboard USS *Doyle* (FFG 39) stand watch topside, watching for signs of right whales.

To protect this endangered species, the Navy implemented right whale mitigations on ships and shore stations in the Jacksonville and Mayport operating areas. Whether it's the operation specialists in Fleet Area Control and Surveillance Facility (FACSFAC) at NAS Jacksonville or the deck seamen lookouts aboard ships like USS *Doyle* (FFG 39), the Southeast Region works with the Coast Guard, the Florida Fish and Wildlife Conservation Commission (FWC) and other mariners in the region to protect these whales.

According to Jackson, North Atlantic right whales have unique qualities.

"The right whale is about 50 to 55 feet when they're fully grown. In the spring and summer months they live in the Bay of Fundy in Canada and travel to the Jacksonville area in the winter months primarily for calving," said Jackson.

"This is the only known calving grounds for this species of right whales. The calves are about 14-feet long and weigh about a ton at birth and adult whales can weigh up to 70 tons."

"A couple things are different about right whales than other whales that you may see," Jackson continued. "Humpback whales have a small dorsal fin on their back and they are lunge feeders, so they come springing out of the water to feed. When right whales are down here, they aren't feeding, they're generally just swimming. They spend a lot of time near the surface with the calves because the calves can't dive as often or as deep as the adults."

Jackson said right whales have special and distinctive characteristics that identify them individually.

"The right whale's head has a growth called a callosity. It's a fingernail-like material that grows on the top of their head, on their chin and along their lips. The material grows as the whale grows. Whales have little creatures on them called whale lice. The lice are white and live on the callosity. From the air and from a boat or ship the callosity looks white and the whales are easily identified by their individual callosity pattern. By photographing those patterns we can identify each whale and track them wherever they go. Every time we photograph them we can tell if that whale has been here, if it's calving, if they are in Canada or on their way back home and track it," Jackson said.

To ensure the right whales are safe, Jackson and her team at the FWC perform daily aerial surveys to spot and track them where they usually swim. When the aerial survey team spots a right whale, they call FACSFAC.

According to CAPT Robert Buehn, commanding officer of FACSFAC, his activity acts as the command and control center for right whale mitigation, with an operation area that expands roughly from Charleston, S.C., to Port Canaveral, Fla.

"[We] coordinate reports from Navy units or other agencies that sight right whales in the Jax operating area. That report goes out over our system and alerts dozens of agencies including commercial fisherman and Navy vessels. We are known as the 'fusion center,'" said Buehn.

"The Navy is concerned during the calving season, so we stand up the fusion center around Dec. 1, although if the whales show up a little bit early like they did this year, we'll adjust to their schedule. Our concern is we don't want any naval vessels to hit any whales. So we want to know where they are and we want all our units to know," he said.

Jackson said the daily aerial surveys are conducted in three different early warning center (EWC) networks along the southeast coast: one from Sapelo Sound, Ga., to north Cumberland Island, Ga.; one from north Cumberland Island, Ga., to Ponte Vedra Beach, Fla.; and one from Ponte Vedra Beach, Fla., south.

"Once we spot the whales, we circle, photograph them and call in their positions," she said. "For the past few years there have been an influx of whale sightings in the NAS Jax and Mayport area, with more than 100 individual right whales spotted last year."

▲ OSC(SW/AS) Daniel Hacker (foreground) and OS3(SW) Richard Tarsitano prepare a simulated message to FACSFAC about a whale sighting. Drills like the one performed aboard *Doyle* (FFG 39) ensure a ship's crew is prepared to handle an actual whale sighting.

▲ A Sailor aboard USS *Doyle* (FFG 39) plots the location of a possible whale sighting in the Combat Information Center. Not only do the Sailors aboard *Doyle* plot the location of the whale, but they send that information to FACSFAC Jacksonville to be disseminated to other vessels or aircraft in the area.

Operations Specialist 1st Class (SW) Frederick Granger, FACSFAC's right whale coordinator for the Southeast Region said the fusion center is manned 24/7.

"We take in reports from civilians and Sailors. We take the positions on paper and then we plot it into our system so all ships in the area know exactly where the calves are and give them a wide berth especially if they are outside the critical habitat area. The critical habitat area is located six to 10 miles from land where the mother may give birth and care for

Photo courtesy of the Florida Fish and Wildlife Commission

▲ A North Atlantic right whale is photographed during an aerial survey.
The right whale can be individually identified based on the white callosity formations on their head. Every formation is different for each whale.

the young whale. Mariners and aircraft are asked to keep a five mile berth around the whale areas," said Granger.

Granger and the rest of the FACSFC crew agree that what they do is not only important to the environment, but to the Navy's mission as well.

"As we speak, there are approximately 350 whales left alive today and the Navy is a very big protector of their environment. This is why we're very vigilant on the reporting of the right whale positions. We're their bodyguards and we give them the protection they need to be able to survive and thrive in the wild," Granger said.

Buehn said he is proud of what he and his crew does.

"We're glad to be part of this system. Although we don't actually go out and see the whales, the personnel here really do get the word out from those who do see them to those who really need to avoid them. We view it as a unique mission for FACSFAC Jax. I don't know of any other Navy command that does it and it is one we take very seriously," Buehn said.

Keeping this endangered species safe requires work from Sailors everywhere in the Southeast Region on land and at sea. The crew aboard the *Doyle* knows this only too well as they work diligently to keep their ship and the right whales safe and secure. Because of the immense size of the whales, they pose just as much a danger to our ships as ships can pose to whales.

"Smaller vessels are at a great danger around the whales," Jackson said. "Down here, most of the whale is under the water so you can't see a lot of it. You might just see the top of its head so boaters may not be aware of how large the whale actually is. From the air we can see exactly how large the whale is next to a 20-foot vessel. That's one of the reasons we have the 500-yard rule between vessels and whales – to keep them separated – for the whale's benefit, and for the vessel operator's benefit."

CDR Mike Elliot, commanding officer, USS *Doyle* said he has seen the effects of an accident with a whale and he will ensure he and his crew go to any means necessary to prevent having it happen again.

"Our lookouts are trained to spot the whales when they blow on the surface and as soon as we see then we turn the ship, go the opposite direction and mark the sighting on the charts. Then we contact our chain of command to report the location, type of whales, and if the herd has calves with it. We try to pass on as much information as possible. That way it educates the rest of the sea area," Elliot said.

Coast Guard Lt.j.g. Andrew Weiss, the navigation officer aboard *Doyle*, gives training to all personnel who stand watch on the bridge.

"We have a DVD that's required viewing for all topside watchstanders. It covers the requirements of avoiding whales and other marine mammals. We look for the blow of the whale. It is one of the first things that lets us know there is a whale. For the right whale the blow is shaped like a 'V,' a twin spout blow hole, that helps identify it as a right whale. Also we may be able to see the top of the whale coming out of the water. They don't breech or jump out of the water too often so the blow is the only thing we'll see most of the time," Weiss said.

According to RADM James A. Symonds, Director, Chief of Naval Operations Environmental Readiness Division, training is the first step to marine mammal mitigation.

"We have a series of mitigation measures that begin with training. All of our Sailors receive specific lookout training. It's approved by the National Fish and Wildlife Service, and it's available on video or disk - all the ships have it so lookouts ensure their ship remains clear of whales," said Symonds.

He noted the Navy's partnerships are vital to protect right whales and other marine mammals.

"The Navy, the Army Corps of Engineers and the Coast Guard donate up to $140,000 annually for aerial surveys that support an emergency warning system to locate and track right whales. And there's a sighting advisory system sponsored by the National Oceanic and Atmospheric Administration that provides broadcasts to let folks know where right whales are at any given time," he said.

Tom Pitchford, wildlife biologist for FWC, agreed.

"The partnership is fantastic. It's a great example of federal, state and private entities involved. The U.S. Navy is doing a huge service here for the right whales by getting the word out. There are so few of these whales that saving one life really does matter, so it makes a tremendous difference. This is a fantastic example of a joint effort between all the partners, and I am really pleased to be a part of it," Pitchford said.

Blowers is a photojournalist assigned to the Naval Media Center, Washington, D.C.

Navy Uses Sonar While Being Environmentally Aware

Sonar is an acronym for "Sound Navigation and Ranging." It is a tool that uses underwater acoustics to determine water depth, the location of mines, and the presence of submarines. According to Director, Chief of Naval Operations Environmental Readiness Division, Rear Adm. James A. Symonds active sonar has become a major piece of the Navy's antisubmarine warfare program over the last 10 to 15 years.

"As submarines have gotten quieter, the passive sonar that used to stand us in good stead 20 years ago is not effective enough in making sure we can track and take action against enemy submarines," Symonds said.

He explained that this is especially true during the global war on terrorism when the Navy is operating in shallow waters such as the Persian Gulf. He emphasized how critical it is that the Navy stays ahead of technology. Symonds also said that working in the shallow water brings the Navy closer to many densities of marine mammals and the Navy is doing all it can to prevent sonar use from causing any harm.

"We are trying to limit our effect in three forms. The first is research, [the research's] long-term compliance plan and analysis, and Sailors on ships. [It comes down to Sailors] using and employing mitigation measures everyday like they have been for years. All of our lookouts are specifically trained to look for whales, whether it's a sonar ship or not. If you are sonar ship and you have a whale within [spotting distance], you want to take action to lower the source level of the sonar or cease the sonar altogether if that whale gets close enough. Sailors know this through their training," Symonds said.

Some of the other protective measures include employing night vision and thermal imaging equipment, extra precautions during chokepoint exercises, listening passively for marine mammals, safety zones around ships and taking appropriate actions when marine mammals are spotted.

"The Navy will continue to train at sea with MFA sonar to ensure the security of our nation and the safety of our Sailors and ships. We will also continue to take every step necessary to safeguard ocean life and to advance the scientific research that will help us make informed decisions," said Donald Schregardus, deputy assistant secretary of the Navy (environment).

According to the Navy's sonar and marine mammal protection Web site, of the U.S. Navy's approximately 280 surface ships, only about 58 percent are equipped with mid-frequency active sonar. About half of these ships are underway at any given time, and for each ship, active sonar is turned on only a small percentage of the time (during certain types of training and maintenance activities). Ships typically employ active sonar, whether for maintenance of for exercises, less than 5 percent of the total time they spend underway in a given year.

Symonds said that as responsible environmental stewards, the Navy is concerned about the potential effects of active sonar on marine mammals and is committed to complying with all applicable federal laws, regulation and policies. The Navy dedicated over $14 million in fiscal year 06 alone towards marine mammal research, part of which is to better understand the potential effects of manmade sound on marine mammals, helping to ensure that Navy policy and compliance are based on real science.

Space Sailors

Story and photos by MC1(AW) Brien Aho

"It is with an Iron will that they embark on the most daring of all endeavors … to meet the shadowy future without fear and conquer the unknown."

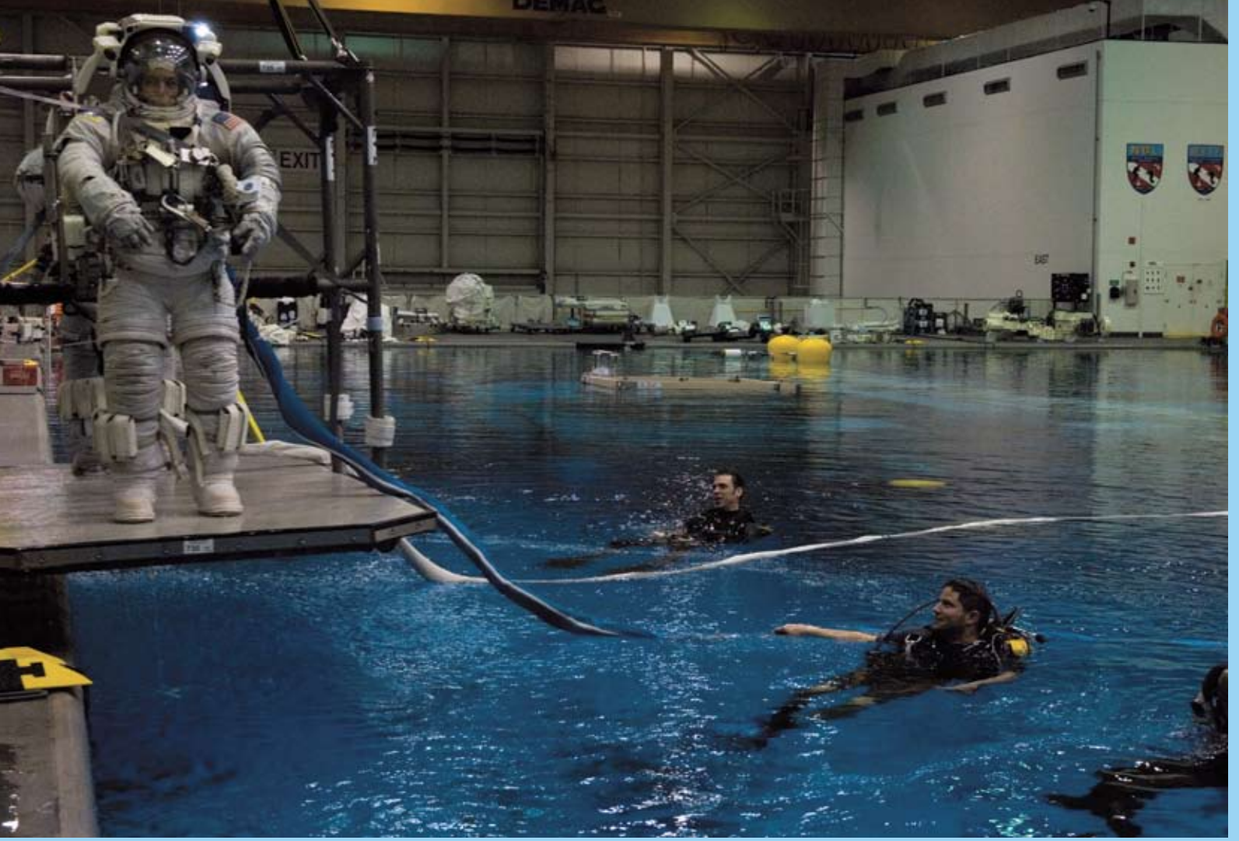
– Ferdinand Magellan

Like Magellan, who took to the oceans in search of new lands, man has used the stars to guide them. For years, Sailors used a device, called a sextant, to plot their vessel's course. Nowadays we double check our positions with high tech devices like a global positioning system (GPS). But the next time you look up to the skies to take a navigational reading you might see a fellow Sailor streaking across the sky.

At this moment, Navy astronauts are looking back down on them from the space shuttle as the earth spins past at more than 1,000 miles an hour at the equator.

"I had a neat vantage point and I was in a foot restraint during a space walk so I could just lean back. The way I was facing I had the space shuttle behind me, so I looked forward straight down at the earth and it was just spectacular," said

▲Astronaut Heidemarie Stefanyshyn-Piper participates in the first of three sessions of extravehicular activity as construction resumes on the International Space Station.
Photo courtesy of NASA



▲ **Safety divers stand ready to assist Stefanyshyn-Piper as she**
prepares to enter the Neutral Buoyancy Lab (NBL) at the Johnson Space Center, Houston.

Stefanyshyn-Piper. "You see the earth going by and you see the land and oceans. You try to locate where you are and you realize you should have paid attention during geography class."

The word astronaut comes from the Greek meaning Sailors among the stars, which is fitting because Sailors have been in the forefront in the space program since 1959 when LCDR Alan B. Shepard, LCDR Walter M. Schirra and LT Scott Carpenter were selected to be in the *Mercury* program.

Shepard was the first American space traveler with a 15-minute flight in the *Mercury* capsule. Since 1959 there have been more than 60 Sailors who have had held the title of astronaut and there are currently 27 Navy officers who are in the space program.

Today's astronauts are in space for a much longer period of time, and with the expansion of the International Space Station they conduct more space walks.

Like Sailors who usually start pre-deployment training six months before a scheduled deployment, NASA astronauts start training two years before their projected launch date.

Some of that training begins in the world's second largest pool, the Neutral Buoyancy Lab (NBL) at Johnson Space Center, Houston. The NBL is 200-feet long by 100-feet wide and 40-feet deep. It contains 6.2 million gallons of water, and can hold an exact replica of the American side of the International Space Station along with the space shuttle.

The immense size of the pool is shocking, but inviting said Quartermaster 2nd Class Nicholas Pavlow, a Navy Reservist and safety diver with NASA.

"The first time I saw the pool, I wanted to dive in," said Pavlow.

Neutral buoyancy is a term used to describe something that has an equal ability to float as well as sink. Because of gravity, even in water, neutral buoyancy is accomplished with weights and flotation devices.

The NBL is the closest thing NASA has to replicate the weightlessness of space, giving astronauts a feel for maneuverability and to learn body positions while working with the gear that they will be using during space walks.

"The space walk experience is unique, and, to get that feeling and to train and work outside in space, which is really a hostile environment, you need to wear a

▲ **Stefanyshyn-Piper receives assistance as she puts on her space**
suit before entering the NBL.

"...If they can maneuver around the equipment and learn how each tool works ... when it comes to the mission everything should run smoothly."

- Capt HeideMarie Stefanyshyn-Piper

space suit which is a cumbersome unit. It is vital that we learn how to operate while wearing the suit and to know our body position while in space around the equipment," said Stefanyshyn-Piper.

"That's why the NBL is so important," she added. "It allows the astronaut time to get familiar with the equipment, and it saves time which is limited by life support systems that are needed when working in space."

The hours an astronaut spends training in the NBL allows the astronauts as well as the safety divers to provide input to the designers of the equipment before it is deployed into space. Because time is precious while in space it is important to know beforehand if the space suit will impede an astronaut in completing tasks.

"If it wasn't for the space suit you wouldn't be able to walk in space so the astronaut needs to know their task and if they can maneuver around the equipment and learn how each tool works. This way when it comes to the mission everything should run smoothly," said Stefanyshyn-Piper.

While only officers get to walk in space it's not by their efforts alone that make the mission a success.

"We have the ability to train

▲ The world's second-largest pool, located in the Neutral Buoyancy Lab at Johnson Space Center, Houston, can hold an exact replica of the American side of the International Space Station and the Space Shuttle.

▼ Test Conductor Drew Manning directs the teams as they practice extravehicular activity in the NBL.

astronauts in a simulated space environment here on Earth," said Robert Durkin, facility and operation manager. More than 200 employees, including 60 core divers work there.

Astronauts are never alone when training in the NBL. There are at least four safety divers under water for every suited astronaut.

Safety divers play a vital role when it comes to the training evolutions. They not only make sure that the astronaut is safe while submerged in the NBL, but they also record every movement so the engineers can learn how to improve equipment design.

"We couldn't do the job without the safety divers," said CAPT Chris Ferguson, a NASA pilot. "They are there to document what's going on, and those images are used as training aids, and of course safety divers are there for the crew's overall well-being. If there is a malfunction with our suit they can remove us from the pool at any time."

The diver's other job is to assist the astronauts under water. Even though objects weigh much less in water, there is still gravity working on Earth and some assistance is needed to maneuver not only from one place to the next, but also while moving the heavy equipment they work on.

"Because gravity is still working on you, if you want to stay in one position while under water you still have to impart some type of force," said CAPT Robert Curbeam, one of the astronauts. "That is exactly the opposite if you want to remain in place in space," he noted.

"In the NBL we have support divers – many are former or active Reserve Navy who work there and basically keep us safe. I owe a lot of my training and expertise to them but I also owe my life to them because they take care of us every single time."

Divers may spend more than 25 hours a week in the NBL. They have other responsibilities, which include reconfiguring the space station and other submerged equipment in the NBL. Each mission is different and numerous missions happen at the same time so the divers are changing the way the station looks under water on almost a daily basis.

"We might dive 10 times in a week depending if they have dual missions going on," said Pavlow. "If they require us to change the reconfiguration for another mission then we could be in the water more than six hours in a day. It's mind blowing what you can get your hands into while working here at the NBL."

For all the active-duty and reserve NASA employees, the sense is that the Navy plays a vital role in them becoming either an astronaut or a support diver.

"The Navy has given me the experience and leadership skills that NASA looks for in their astronauts," said Stefanyshyn-Piper.

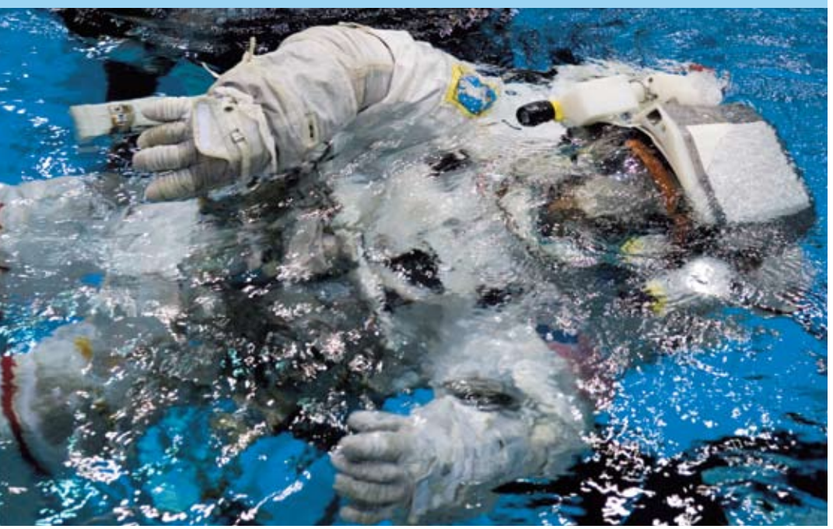
"It's a similar environment. It's a very safe and professional environment," said Pavlow, "and because of what I learned doing search and rescue in the Navy, I was able to bring that here to the pool deck and do something as important as helping astronauts continue space exploration."

▲ Stefanyshyn-Piper is lowered into the NBL for a six-hour extravehicular activity mission at the Johnson Space Center, Houston.

Photo courtesy of NASA

▲ An astronaut conducts a space walk while anchored to a foot restraint on the International Space Station's robotic arm.

▼ Stefanyshyn-Piper surfaces with the help of safety divers after six hours in the NBL.



Navy astronauts continue to set the bar when it comes to space exploration. There are currently two Navy astronauts in the International Space Station. CDR Michael Lopez-Alegria and CDR Suni Williams will be in the space station for more than seven months. Both are graduates of the U.S. Naval Academy.

Lopez-Alegria surpassed the old U.S. record of 58 hours, 32 minutes for most time walking in space with a maintenance run outside on the International Space Station. The new U.S record is 61 hours and 22 minutes. Only Anatoly Solovyov, one of the Russian cosmonauts has logged more time.

"We have two big proponents of the Navy in the Space Station right now who are doing a fabulous job. "Mike LA" as we call him, and "Sunny" Williams will be in space for more than seven months," said Ferguson. "I believe that once their time is up at the space station Sunny will have the most time space walking than any other human."

The next time you step out onto the deck at night in the middle of the ocean to view the galaxy, take a look up. One can see satellites as they fly through the night sky and just maybe you'll begin to see the impact this planet has on those who have seen it from a ship in space.

"I absolutely savor those moments where I can just sit back and take a look at the Earth," said Curbeam. "I love the view. It's drop-dead gorgeous. This planet is so beautiful that if you don't leave Earth as a conservationist then you definitely will come back as one."

So keep looking up toward the skies and remember you are not alone out there – there are other shipmates looking back at you.

Aho is a photojournalist assigned to Naval Media Center, Washington, D.C.

Apollo 13 – "The Successful Failure"

It was to be America's third manned attempt to land on the moon. *Apollo 13*, set for launch on April 11, 1970, atop the powerful Saturn 5 rocket, would prove to be unlike anything experienced before or since in the exploration of space.

Following the historic missions of *Apollo 11* and *12*, the crew of *Apollo 13* had a mission to expand on the successes achieved thus far in NASA's lunar landing program by landing in the Fra Mauro highlands. There, geologists hoped the astronauts would find valuable rocks perhaps holding secrets to the Moon's early formative period billions of years ago. The launch had a minor glitch–one of the engines did not fire as long as needed, which was compensated for by the other engines–but otherwise, the first few days proceeded in a now-familiar pattern.

The American public, however, seemed to barely take notice. Although it was less than a year before that Neil Armstrong thrilled the world, making history by becoming the first human to set foot on the moon, distractions like Vietnam, politics and the economy led many to consider *Apollo 13* to be just a routine mission, barely registering except to space exploration fans. Few Americans even tuned into a live broadcast from space on the second day of the mission, when *Apollo 13*'s crew was on the way to the Moon.

That was soon to change.

As Navy Captain James Lovell, commander of the ill-starred *Apollo 13* mission described it:

"Fred [Haise] was still in the lunar module. Jack [Swigert] was back in the command module [CM] in the left-hand seat, and I was half-way in between, in the lower equipment bay, wrestling with TV wires and a camera, watching Fred come on down, when all three of us heard a rather large bang–just one bang. We suddenly realized that something else had occurred ... but exactly what we didn't know."

Swigert, in the CM reported, "... about two seconds elapsed when I had a master alarm and a main Bus 'B' undervolt [loss of power] ... I transmitted to Houston that we had a problem."

Lovell said, "I looked out the window and saw this venting ... my concern was increasing all the time. It went from 'I wonder what this is going to do to the landing' to 'I wonder if we can get back home again' ... and when I looked up and saw both oxygen pressures ... one actually at zero and the other one going down ... it dawned on me that we were in serious trouble."

The serious nature of the emergency was starkly evident to the crew and Mission Control. Lovell and his crew mates were more than 200,000 nautical miles out in space with a dead Service Module, including its main propulsion engine. The explosion had wiped out their main supply of life-sustaining oxygen and power.

The crew's salvation rested with the Lunar Module (LM), the oddly-shaped spacecraft designed to separate from the CSM, land two astronauts gently on the moon, sustain them while there and then carry them back to the mother ship in lunar orbit. But that mother ship was a partial wreck, drifting in space, and the LM became the lifeboat.

What followed was an epic struggle of skilled and highly trained astronauts working in close coordination with the ground-based team at Mission Control against the hostile environment of space.

By this time, the life and death drama unfolding hundreds of thousands of miles in space had captured the attention of people around the world. The team at Mission Control found themselves working under the glare of the world's media who had descended upon Johnson Space Center. Unlike the space program of the Soviet Union, NASA allowed the entire world to look over the shoulders of the mission control team as they worked to save the crew.

While the astronauts powered up the LM lifeboat, Mission Control set about mobilizing all the talents available to deal with the crisis. In addition to the contractor representatives normally assisting with the flight, the manufacturers of the major systems and sub-systems in the spacecraft made their top specialists immediately available. A coast-to-coast network of simulators, computers and experts was quickly hooked up. The operation was a tour de force of the breadth and depth of American technological competence.

Many of the difficulties that arose on the return were solved by "jury rigs" that were marvels of ingenuity, including an air purifier that 'scrubbed' the atmosphere in the spacecraft of carbon dioxide (produced by the crew's exhalations).

Numerous other perils challenged the crew and the ground controllers in Houston over the next 86 hours and 57 minutes--more than three days–while the stricken ship and crew huddled in their cramped 'lifeboat' Lunar Landing module named "Aquarius" trying to stay warm and conserve power. One of the most serious threats facing the crew was the severe damage to the spacecraft's power systems; they simply didn't have enough battery power to bring their craft down to a safe landing on Earth. Unless a solution was found, they would burn up upon reentry into the Earth's atmosphere.

Working under tremendous pressure of time as the speeding spacecraft approached earth at 25,000 miles per hour, the Mission Control team and the crew methodically worked their way through every problem.

The heroic tenacity, resourcefulness, ingenuity and courage of the JSC team and the astronauts resulted in the final victory which came on April 17: Odyssey's trio of orange-striped parachutes dropped the spacecraft into the gently rolling Pacific Ocean 3.5 nautical miles from the prime recovery ship, *LPH-2*.

As an aborted mission, *Apollo 13* was officially classified as a failure, the first in 22 manned flights by NASA. But, in another sense, as a brilliant demonstration of the human spirit triumphing under almost unbearable stress, it is the most successful failure in the annals of space flight.

Some material excerpted from W. David Compton, Where No Man Has Gone Before: A History of Apollo Lunar Exploration Missions (Washington, D.C.: NASA SP-4214, 1989), pp. 386-93.

◀ BUCN Aaron Stokes stretches barbed wire through a spool of concertina wire to secure an entry point at the camp's Logistics Support Area at Fort Hunter Liggett, Calif., during Operation *Bearing Duel*.

Photo by MC1 Carmichael Yepez

NECC: Consolidation of Forces

Story by MC1(SCW) Jess M. Johnson

For the past year, Navy Expeditionary Combat Command (NECC) has been growing and reshaping the Navy's mission ashore. It's goal, one-stop shopping for combatant commanders requiring additional combat support forces, or expertise in areas unique to Navy.

According to RADM Donald Bullard, Commander NECC, integrating long-standing communities and creating entirely new commands while providing direct combat support at a high operational deployment tempo has been challenging.

The forces brought together under NECC better represent the commands and provide a central point for command and control. As of today, it consists of Naval Coastal Warfare, Explosive Ordnance Disposal, Navy Expeditionary Logistics Group, Naval Construction Force, Riverine Force, Maritime Civil Affairs Group (MCAG), Expeditionary Combat Readiness Center and Combat Camera.

"We had to give these Sailors a voice," said Bullard. "By bringing them all together we have been able to consolidate and coordinate their abilities and can better employ these forces."

With the current operational tempo and the Navy's evolving role in the global war on terrorism, it has become evident that the Navy can and will provide more assistance to the other services with their heavy deployment schedules. Some Army and Marine Corps units have deployed in support of Operation *Iraqi Freedom* and Operation *Enduring Freedom* at twice their normal deployment schedule.

"We are working to take the burden off them and help shoulder the load," said Bullard. "We aren't trying to take anything away from the other services."

▲ BU3 Christopher Rasmussen
assigned to Naval Mobile Construction Battalion (NMCB) 4 mans an M2 .50 caliber machine gun during a field exercise in Okinawa's central training area.

Photo by MC3 Ronald Gutridge

◀ ND1 Josh Moore welds a
repair patch on the submerged bow of USS *Ogden* (LPD 5) while the ship was in port at Naval Base San Diego. Moore is a member of the Southwest Region Maintenance Center (SWRMC) Dive Locker's underwater welding team.

Photo by MCCS Andrew McKaskle

The current operational tempo has required the Navy to become more involved in the efforts on the ground. In Africa, the Navy has taken operational command of Combined Task Force Horn of Africa, requiring the Navy to work outside what the public perceives as their traditional operating area.

But it isn't just the new requirements that have brought about the creation of NECC. These camouflaged Sailors were all serving in separate commands, with many similar assignments but without a common foundation in operational techniques or in the equipment they use to complete their mission.

Much of their table of allowance (TOA) varied significantly from one command to the next. Now that they have been organized under a single parent command these components are building a core curriculum along with an updated TOA to ensure each member of the NECC is as well-trained and well-equipped as possible.

"Being in an oversight position, we have been able to ensure our Sailors have the right equipment and training to be able to complete their mission," added Bullard.

Combat support is not the only calling of the NECC. Today the United States is more proactive in areas of the world that could become havens for terrorists and is currently building relationships and creating allies with these nations by "waging peace" around the world. This allows foreign governments the opportunity to see firsthand that America cares about their well-being and wants to help them build a brighter future for themselves and their children.

Sailors currently serving in the Horn of Africa and other areas around the world are building schools, drilling wells for fresh water and showing the people of these areas that they are there to help.

For many years the United States has sent the military to nations in need of humanitarian assistance or rebuilt them after a conflict. The Navy's role in these efforts was usually limited to transporting supplies and equipment to the affected nation and deploying a detachment from a Seabee battalion for immediate relief efforts and rebuilding the infrastructure.

Now, NECC is taking a more direct route with the MCAG. Made up of two squadrons, MCAG will work directly with civilian governments within a combatant commander's maritime area of operations in order to improve that countries infrastructure.

Sailors assigned to these units will have a huge impact on relations, not only with the governments of these nations, but as seen after the humanitarian relief efforts in Tsunami ravaged Indonesia and the earthquake in Pakistan, with the general population's overall opinion of America.

Johnson is a photojournalist assigned to Naval Media Center, Washington, D.C.

▲ EOD1 Ray Kassow (left) and EOD3 Chris Eichas test a satellite communication system aboard USS *John C. Stennis* (CVN 74).

Photo by MC2 Heidi Giacalone

▲ An Iraqi soldier assigned to the Iraqi Riverine Police Force fires an M-60 machine gun during special boat maneuvers and weapons handling training at Stennis Space Center, Miss. The Iraqi force sends participants to the six-week courses at Naval Small Craft Instruction and Technical Training School (NAVSCIATTS).

Photo by MC1(AW) Brien Aho

Another aspect of the NECC is the new career path that has opened for Sailors who want to play a more direct role in the global war on terror. Sailors who want to be at the very tip of the spear, but aren't assigned to what were the traditional ground combat components of the Navy, can find opportunities to serve within the many components of the NECC. For more information contact your command career counselor.

DO YOU NEED A REASON TO SAVE?

Military Saves is a service-wide campaign that encourages military members and their families to build wealth. The Commander, Navy Installations Command's Fleet and Family Readiness staff, in support of the Military Saves Campaign, has compiled some compelling reasons to save.

According to Commander, Navy Installations Command, Vice Adm. Robert T. Conway, "A Sailor that doesn't have to worry about financial affairs is a Sailor who is better able to support the Navy mission. Personal financial readiness is critical to unit readiness." Saving money is one of the most valuable habits service members can nurture. Having a savings fund provides financial security.

TIP #1: SAVE FOR EMERGENCIES

Having an emergency savings fund may be the most significant difference between service members who manage to stay above water and those who drown in debt. A $2,000 emergency fund can make the difference between being able to afford an emergency or going into debt to cover the expense. An emergency fund allows military families to easily meet unexpected financial challenges such as:

- repairing the brakes on your car;
- replacing a broken window in your house; or
- flying to visit a sick parent.

TIP #2: SAVE TO PURCHASE A HOME

Home ownership is a good investment. Today home equity represents more than four-fifths of the typical family's wealth. If you are thinking about buying a home, be realistic about the home you can afford to buy. The rule of thumb is to buy a house that is no more than two-and-a-half times your annual income.

TIP #3: SAVE FOR RETIREMENT

It is never too late to start saving for retirement. Military families will need 60 to 80 percent of their pre-retirement income to maintain their present standard of living. T. Rowe Price, an investment management firm, recommends saving 15 percent of your annual salary (adjusted for inflation) to replace 50 percent of your salary in retirement.

Take advantage of Navy-sponsored retirement programs such as the Thrift Savings Program (TSP) to supplement your retirement income. Learn more about TSP at http://www.tsp.gov or at https://mypay.dfas.mil.

TIP #4: SAVE FOR COLLEGE

According to the U.S. Census Bureau statistics, people with a bachelor's degree earn nearly twice as much on average than those with only a high school diploma. Higher education is expensive, but it is a good investment. There is no shortage of college savings plans to choose from. Options to save for college include 529 plans, prepaid tuition plans, educational saving accounts, custodial accounts and savings bonds.

TIP #5: SAVE TO BUY A CAR

Don't be driven to debt by car loans and repairs. When saving to buy a car, calculate what you can afford. Remember to consider insurance costs, state registration fees, car insurance, fuel, and routine maintenance. A good rule of thumb is to plan on spending 10 to 15 percent of your total monthly budget on automotive expenses.

TIP #6: SAVE FOR VACATION

Life shouldn't be all work and no play. Most vacation-goers plan for the big expenses – transportation, lodging and meals – but forget to plan for hidden expenses: tips/gratuities, parking, souvenirs, tickets, fuel, travel insurance, etc. Take advantage of your local Information Ticket and Travel (ITT) office discounts on tickets to local and national attractions, discounted cruises, land travel packages and military vacation rentals.

To learn more about available discounts, stop by your local ITT office or visit http://mwr.navy.mil.

For more information about building wealth contact your command financial specialist, visit your local Fleet and Family Support Center or go to http://www.nffsp.org.

Additional savings tips and resources are available at http://www.saveandinvest.org/.

To get simple tips on the best ways to save and to make a commitment to save visit http://www.militarysaves.org.

SAFETY FIRST

Story and photo by MC1(AW) Brien Aho

Maneuvering inside the International Space Station is difficult enough, but for Quartermaster 2nd Class Nicholas Pavlow avoiding four moving camera cables and two umbilical chords attached to the astronauts providing life support air can be a daunting task.

For Pavlow, a Navy Reservist and safety diver it's an every day mission. He spends up to six hours during two dives assisting astronauts making sure they are safe and that every movement is recorded.

Pavlow grew up a few miles from the Johnson Space Center but never imagined he would work for NASA in the Neutral Buoyancy Lab (NBL), one of the world's largest pools that holds an exact replica of the American side of the International Space Center and the Space Shuttle. Pavlow applied for a safety diver position with NASA after spending a few years on active duty where he obtained his search and rescue qualifications.

"I never seriously thought about it because it seemed to be one of those jobs that was difficult to get, but I feel fortunate that I got it and the Navy gave me a good start toward getting the job here. It's definitely the job to have [since I'm] not on active duty," said Pavlow.

Safety divers are in the water the entire time during a "mission" in the NBL. The divers are there to record all the action, assist when objects need to be moved including the astronauts themselves, reconfigure the station for mission requirements and to rescue the astronauts in case of an emergency. They can expect to be in the water more than 25 hours a week.

"We couldn't do the job without the safety divers," said CAPT Chris Ferguson, a Navy pilot.

Many of the safety divers are former Navy or active-Reserve Navy and are used to document what's going on in the training. In their important role, they serve as a safety net for the astronauts. If there's a malfunction with their suits or an emergency, the divers are there to remove the astronauts from the pool.

Astronauts train for missions years in advance so the divers see the entire evolution of the mission hundreds of times. Because they are so experienced in mission requirements, the divers are important instructors to the astronauts. They then provide input on how the astronauts have performed and also how they might be able to better perform a maneuver or better design a piece of equipment.

"I owe a lot of my training and expertise to them, but I also owe my life to them because they take care of us every single time," said CAPT Robert Curbeam, a Navy astronaut.

"Being part of the International Space Station is something I never thought I would be able to be part of," said Pavlow. "But coming here, diving in this 6.2 million gallon pool, learning the different components and getting detailed knowledge of how the space station works is by far the coolest experience of my life."

Aho is a photojournalist assigned to the Naval Media Center, Washington D.C.

Focus on Service

Remembering the Doolittle Raid

Story by LT Jennifer Cragg and MCC Michael Foutch

ADM Yamamoto of the Imperial Japanese Navy, who led the notorious surprise attack on Pearl Harbor Dec. 7, 1941, had prophetic words on that day of infamy. As the bulk of the U.S. Pacific Fleet lay in ruins, Yamamoto was far from jubilant. He feared the attack he led merely awakened a sleeping giant.

This year marks the 65th anniversary of the day that giant struck back.

As the wreckage of our battleships smoldered, American military planners quickly contemplated a daring mission – to strike back at military and industrial targets in Japan in what would be the first offensive action of World War II in the Pacific.

Four months later, Army-Air Force Lt. Col. James H. Doolittle daringly led a hastily-assembled squadron off the deck of the carrier USS *Hornet* (CV 12), to bombing targets on the Japanese mainland. The actual physical damage done to Japan's war-making infrastructure was, admittedly, minimal, but the news of the successful attack on the mainland of Japan stirred the hearts of Americans.

Although Doolittle's raid originally was to serve as no more than a tactic to raise the morale of Americans devastated by the news from Pearl Harbor, and fearful of further Japanese attacks, the raid proved to have strategic benefits for future successes of American and Allied forces in the war in the Pacific.

VADM William F. Halsey, Commander of the Pacific Fleet's aircraft carriers and Commander of Task Force (TF) 16 ordered TF 16 to undertake the secret mission April 2, 1942.

In preparation for the raid, the *Hornet* and TF 16 steamed toward a launch point some 500 miles from Japan. The force hardly had an easy journey; according to after-action reports, the number of Japanese patrol vessels encountered at such distance from Japan was astounding. While many Japanese ships encountered had been evaded or sunk, some were able to release radio warnings of the approach of the American force.

Besides facing hostile Japanese forces, *Hornet* faced unfavorable wind and sea conditions to launch aircraft; some waves reportedly broke over the flight deck.

The raid would use 16 twin-engine *Mitchell* B-25B bombers, each with a five-man crew. Military planners believed such aircraft could fly off a carrier with a useful bomb load after tests in February 1942, demonstrated B-25s could be airborne in as little as 500 feet of deck space. The aircraft also could hold enough fuel to fly the distance from *Hornet* and drop their payload. But because the carrier lacked the capability to land the returning aircraft, there would be no return to the ship. Doolittle and his squadron would have 20 minutes of fuel to escape to the southwest and friendly airfields in China.

▲ U.S.Army-Air Force *Mitchell*
B-25B bombers line up for takeoff from USS *Hornet* (CV-8), on the morning of April 18, 1942. White lines were painted on the flight deck, below the plane's nose and port side wheels, to guide the pilot during the takeoff runs.

Photo courtesy of the U.S. Naval Historical Center

All that was left was for the crews to steel their courage, climb aboard the aircraft, launch into the air, successfully evade the formidable Japanese air defenses near the targets, and strike.

Most of the B-25s attacked the Tokyo area, with a few hitting Nagoya, Japan. Damage to the intended military targets was modest.

At 2:45 p.m., radio broadcasts across the country announced that Japan had been attacked. Japanese propaganda dismissed the attack, calling it a "Do-Nothing Raid," but in fear of the ability of the U.S. Navy to carry out such a long-range attack caused them to recall a number of fighter squadrons back to the home islands to serve in defense. That defensive move proved later to weaken Japan's offensive air capabilities against Allied forces at Midway and other Pacific campaigns.

The courage to pull off the raid, which caused little material damaged and fraught with difficulty for the pilots and crew, proved such an inspiration to the American people that Doolittle was awarded the Medal of Honor by President Franklin D. Roosevelt, and promoted from lieutenant colonel to brigadier general.

It was soon obvious, that Doolittle and his raiders proved Yamamoto's warning about waking a sleeping giant.

Cragg and Foutch are assigned to the Naval Media Center, Washington, D.C.

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